ABSTRACT OF THE DISCLOSURE

A genetic design method and apparatus in which desired profiles, such as of an automobile, are broken down into concepts, including the local concepts of surface segments and glue segments, and in which a genetic algorithm is used to evolve parent profiles to produce offspring profiles based on merit values of the concepts. The genetic algorithm includes a probabilistic recombination algorithm which selects for each of the attributes of the concepts at least one of a random value and a value of the attribute associated with one of the parent profiles depending on a non-linear importance function based on the merit values. The combination of the merit values, as represented by the non-linear importance function, reflects the preferences of the designer as the design progresses through various modifications and generations of evolution. A family tree is maintained to identify successive generations of the parent and offspring profiles.